

### **REMARKS**

Claims 1-5, 8-11, 13-15, 17 and 21-26 are pending. Claims 6-7, 12, 16 and 18-20 have been cancelled without prejudice.

This Amendment is in response to the Office Action mailed January 4, 2011. In the Office Action, the Examiner rejected claims 1-5, 8-11, 13-15, 17, and 21-26 under 35 U.S.C. §112, first paragraph; claims 1-5, 8-11, 13-15, 17 and 21-26 under 35 U.S.C. §103(a). Applicant has amended claims 1-2, 14-15, and 23-24. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

#### ***Rejection Under 35 U.S.C. § 112***

In the Office Action, the Examiner rejected claims 1-5, 8-11, 13-15, 17, and 21-26 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. In the interest of advancing prosecution of the present invention, Applicant has amended claims 1-2, 14-15, and 23-24 as per the Examiner's recommendations.

Therefore, Applicant respectfully requests the rejection under 35 U.S.C. §112 be withdrawn.

#### ***Rejection Under 35 U.S.C. § 103***

In the Office Action, the Examiner rejected claims 1, 2, 11, 23, and 24 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,129,493 issued to Tighe et al. ("Tighe"); claims 3, 4, 25, and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tighe in view of U.S. Patent No. 4,056,458 issued to Pohto et al. ("Pohto"); claims 5 and 13 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tighe in view of Pohto as applied to claims 3 and 4 above, and further in view of "Newest News About Brown's Gas" ("NNABG"); claims 8 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tighe in view of U.S. Patent No. 3,875,040 issued to Weltin et al. ("Weltin"); claim 10 is rejected under 35 U.S.C. §103(a) as being unpatentable over Tighe in view of Weltin as applied to claim 8 above, and further in view of NNABG; claims 14, 15, and 17 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tighe in view of NNABG; and claims 21 and 22 are rejected under 35 U.S.C. §103(a) as being unpatentable over Tighe in view of NNABG, and further in view of Pohto.

Applicant respectfully traverses the rejection and submits that the Examiner has not met the burden of establishing a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, certain basic criteria must be met. For instance, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. MPEP §2143. Applicant respectfully submits that the combined teachings do not address each and every limitation, and thus no *prima facie* case of obviousness has been established.

Furthermore, the Supreme Court in Graham v. John Deere, 383 U.S. 1, 148 USPQ 459 (1966), stated: “Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.” MPEP 2141. In KSR International Co. vs. Teleflex, Inc., 127 S.Ct. 1727 (2007) (Kennedy, J.), the Court explained that “[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order *to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.*” *Emphasis Added*. The Court further required that an explicit analysis for this reason must be made. “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” KSR, 127 S.Ct. at 1741, quoting In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006).

In the instant case, Applicant respectfully submits that the combined teachings of the cited prior art references do not teach or suggest all the claim limitations. Furthermore, Applicant respectfully submits that there are significant differences between the cited references and the claimed invention and thus, there is no apparent reason to combine the known elements in the manner as claimed. No *prima facie* case of obviousness has been established.

Tighe and NNABG, taken alone or in any combination, do not disclose or render obvious, at least, (1) “a second cell frame including an in-flow port to receive the in-flow solution including the contaminant metal and an out-flow port [...] to output a solution without the

contaminant metal,” as recited in independent claim 1 and 23, (2) “a collective depth of the first and second compartments houses at least the membrane,” as recited in independent claims 1, 14, and 23.

(1) an in-flow port to receive the in-flow solution including the contaminant metal and an out-flow port to output a solution without the contaminant metal (claim 1 and 23)

Tighe merely discloses the catholyte chamber 30 including an inlet 78 receiving deionized water therein and an outlet 80 for discharging the products of electrolysis from the catholyte chamber 30 (Tighe, col. 5, lines 26-31; Figure 2). During cell operation, NaOH, H<sub>2</sub>, and H<sub>2</sub>O are generated in the catholyte chamber 30 and pass outwardly therefrom through outlet 80 (Tighe, col. 6, lines 41-44; Figure 2).

In contrast, the independent claims 1 and 23 recite: “a second cell frame including an in-flow port to receive the in-flow solution including the contaminant metal and an out-flow port [...] to output a solution without the contaminant metal.” *Emphasis Added*.

As delineated in the Specification, “the ME system 100 comprises a tank 110 that receives an item 120 for removal of excessive chemicals and/or contaminants (hereinafter referred to as “chemical elements”). Examples of chemical elements include any type of ion, inclusive of non-metals and metals (e.g., Nickel “Ni”, Zinc “Zn”, Cadmium “Cd”, Chromium “Cr”, Silver “Ag”, Gold “Au”, Platinum “Pt”, etc.)” (See, for example, Specification, page 5). *Emphasis Added*.

Applicant submits that, contrary to that alleged by the Examiner, the inlet 78 and the outlet 80 in Tighe cannot respectively correspond to “the in-flow port” and “the out-flow port,” as recited in claims 1 and 23, because the inlet 78 does not receive a solution that includes a contaminant metal and the outlet 80 does not output a solution without that contaminant metal. Instead, the inlet 78 receives purified/deionized water and the outlet 80 discharges NaOH, H<sub>2</sub>, and H<sub>2</sub>O.

(2) a collective depth of the first and second compartments houses at least the membrane (claims 1, 14, and 23)

Moreover, Tighe merely discloses a pair of neoprene gaskets 60, 62 being disposed between peripheral flanges 38, 40 of the catholyte and anolyte chambers. Disposed between neoprene gaskets 60, 62 generally parallel to cathode 40 and anode 50 is a substantially

hydraulically impermeable cation exchange membrane 64 (Tighe, col. 4, lines 47-57; Figure 2). *Emphasis Added.* Conventional mechanical fasteners 68 are employed to assemble catholyte and anolyte chambers 30,32 together at flanged areas 38,48 with neoprene gaskets 60,62 and membrane 64 interposed therebetween (Tighe, col. 5, lines 10-15; Figure 2). *Emphasis Added.*

As illustrated in the Figure 2, the membrane 64 is not placed inside the chambers 30,32 between the gaskets 60,62 and the side walls 36,46. Instead, the membrane 64 is held between the flanged areas 38,48 by the fasteners 68. Thus, the membrane 64 is not housed within the collective depths of the compartments of the chambers 30,32. Accordingly, Tighe fails to disclose “a collective depth of the first and second compartments houses at least the membrane,” as delineated in independent claims 1, 14, and 23.

Applicant further submits that a *prima facie* case of obviousness has not been established for dependent claims 2-5, 8-11, 13, 15, 17, 21-22, and 24-26. However, based on the dependency of claims 2-5, 8-11, 13, 15, 17, 21-22, and 24-26 on independent claims 1, 14, and 23, respectively, which are believed to be in condition for allowance, Applicant respectfully submits that claims 2-5, 8-11, 13, 15, 17, 21-22, and 24-26 are believed to be allowable for at least the reasons set forth above.

Therefore, Applicant believes that independent claims 1, 14, and 23 and their respective dependent claims are distinguishable over the cited prior art references. Accordingly, Applicant respectfully requests the rejection under 35 U.S.C. §103(a) be withdrawn.

### ***Conclusion***

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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